**SYNOPSIS FOR Ph.D. THESIS WORK**

**IN**

**AGRICULTURAL EXTENSION**

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| TITLE OF THE RESEARCH: | Diverse Needs of Farmers from Agricultural Extension System in Changing Agricultural Scenario in Maharashtra |
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*Keywords:* Agricultural extension system, farmers' needs, changing agricultural scenario, information sources used, farmers' satisfaction

## Introduction

The Indian public agricultural extension system is one of the largest knowledge and information dissemination institutions in the world. The system played a critical role during the Green Revolution period, but in recent years, it has undergone a high level of scrutiny (Babu *et al.*, 2013; Sontakki *et al.*, 2010). Experience over the last twenty years has created debate concerning the role of public sector agricultural extension in dissemination of scientific technologies under different farming systems and most significant shortcomings of it are mentioned as (a) unresponsiveness to cater for the variation in farmers' needs, (b) lack of ownership by the intended beneficiaries, (c) failure to reach resource-poor farmers (youth and women), (d) limitations in the quality of field and technical staff, and (e) high and unsustainable public costs (Ghosh, 2012).

The nature of agriculture has been changing rapidly during the last two decades and farmers currently need a wide range of support. To meet farmers changing need for information and advisory support (Van den Ban, 1998), extension should engage with a wide range of issues related to agriculture. This includes markets, credit and insurance, in addition to technology and research services and making arrangements for the supply of inputs. As well the farm family requires agricultural development support and the support for diversified livelihoods that requisite to restructure government extension machinery with a new set of operational procedure with more flexible approach to meet the emerging needs of farmers at local level (Ghosh, 2012).

Public sector extension in both developed and developing countries is undergoing major reforms. Several efforts have been made in the public sector over the past one decade to initiate various reform measures and operational models to improve the organizational performance of this system that includes decentralization, pluralism, cost sharing, cost recovery, participation of stakeholders. Yet, the challenge of enhancing relevance, efficiency, and effectiveness of the public sector agricultural extension system in meeting its organizational goals and objectives remains unresolved (Desai *et al.*, 2011; Babu *et al.*, 2013;). Research-extension-farmer linkages are absent or weak in many instances. Chah *et al.* (2013) therefore opined that agricultural development programs approaches will be workable if agricultural information dissemination and management is premised on understanding of what farmers' information needs are. The information needed differs among categories of farmers and can be based on specifics that delineate these groups of farmers, for example, land tenure, crop grown, farm size or agro climatic region (Rivera 1996).

Although Maharashtra is a highly industrialized state of India, agriculture continues to be the main occupation of the people. About 61% of the people directly or indirectly depend on agriculture and allied activities for their livelihood. About 78.6 per cent (Census 2011) farmland holdings of Maharashtra are with the small and marginal farmers owning land up to 5 acres. There are four divisions in Maharashtra indicating the crop specialization. In which, farmers of Western Maharashtra mostly grow Sugarcane, Wheat, Onions and other irrigated crops; Konkan region is famous mostly for Paddy and Fruits while Marathwada is for Cotton, Pulses and Oil Seeds; farmers of Vidarbha cultivate mostly the Cotton, Arhar and Soybean.

The productivity of important crops in the State is low as compared to average productivity of these crops with national averages and averages of many other states. This may be because of low irrigated area, only Western Maharashtra part is under irrigation but most of the areas in Vidarbha and Marathwada are rainfed. Moreover, though technologies are available, not being fully adopted and improved practices are not followed to the full extent by farmers.

**Statement of the problem**

Presently, Indian agricultural extension has wide mandates and despite the pluralistic extension approaches, its coverage and use of services is limited; particularly in rainfed regions which are represented by marginal and smallholder farmers, who contributes 78.6 per cent (Census 2011) farmland holdings in Maharashtra. The productivity of important crops in the State is low as compared to average productivity of these crops with national averages and averages for many other states which is due to lack of knowledge, scientific application of crop management, diversification practices, inappropriate system such as non-availability of quality input material in time, inadequate irrigation facility, non-remunerative prices and dominance of middlemen in agricultural marketing structure. These factors have driven farmers to the debt trap and have caused distress leading to even suicide. Hence, there is need to develop "need-based" capacity building of small-scale men and women farmers, as well as gaining access to reliable information in increasing their productivity and profitability for livelihoods improvements (Singh *et al.*, 2010).

In this context the present study "Diverse needs of farmers from agricultural extension system in changing agricultural scenario in Maharashtra" is proposed to be conducted with following **objectives.**

1. To explore socio-personal, socio-economic, socio-psychological and communicational characteristics of the farmers in Maharashtra.

2. To investigate the differential needs of different categories of farmers.

3. To ascertain the reforms and delivery of services in different agricultural extension agencies.

4. To assess the level of satisfaction of the farmers with respect to extension services provided to them and factors associated with.

5. To delineate the gaps between the extension services needed and received.

6. To examine the constraints faced by the farmers in obtaining extension services.

**Importance of the study**

According to the changing agriculture scenario the needs of the farmers are also changing. The information needed differs among different categories of farmers and apart from varied information required by different farmers and the different information source available to them, farmers' literacy level and resources accessibility, impacts on information needs, searching behaviour, access and use of information by farmers also influence the farmers' needs. Therefore, the study will guide future researchers in understanding many aspects relevant to socio- personal, socio- economic and communicational characteristics of the farmers and their varying needs.

Also, it will provide a full insight into the gaps between the requirement of farmers and their fulfillment by the different extension organizations, level of satisfaction of farmers along with the factors associated with and the constraints faced by the farmers in obtaining extension services.

Moreover, the study will assume great significance in creating database for realistic planning and implementation of future extension activities. Findings will also serve as a bench mark for future reforms in extension.

**Review of Literature**

Rivera (1996), found in his study that the information needed differs among categories of farmers and can be based on specifics that delineate these group of farmers, for example, land tenure, farm size or agro climatic region.

Farrington *et al.* (1997), in a study in India reported that information needs of farmers who work under rainfed condition will be different from the needs of farmers working under irrigated condition.

Swanson (2008) mentioned that apart from varied information required by different farmers and the different information source available to them, farmers' literacy level and resources accessibility, impacts on information needs, searching behaviour, access and use of information by farmers influence the farmers' needs.

Desai *et al*. (2011), had reported that the challenge of enhancing relevance, efficiency, and effectiveness of the public sector agricultural extension system in meeting its organizational goals and objectives remains unresolved.

According to the Census (2011), Indian agricultural extension has wide mandates and despite the pluralistic extension approaches, its coverage and use of services is limited; particularly in rainfed regions which are represented by marginal and smallholder farmers'. 78.6 per cent farmland holdings of Maharashtra are with the small and marginal farmers owning land up to 5 acres.

The 12th Plan Approach Paper, GOI (2011) has articulated that feeding India's growing population, meeting diversified food basket and needs of food security, public sector technology generation often fails to take into account farmer's needs, perceptions and location-specific conditions for each crop leading to significant gaps between varieties released by public sector institutions and those actually used by farmers, productivity of rainfed agriculture has lagged, causing widespread distress, most visible aspects of which are farmer suicides etc, are several challenges faced by the Indian agricultural sector.

Ghosh (2012) his reviewed on "Innovations in public sector-led agricultural extension" indicated that the last twenty years has created debate concerning the role of public sector agricultural extension in dissemination of scientific technologies under different farming systems and most significant shortcomings of it are mentioned as (a) unresponsiveness to cater for the variation in farmers' needs, (b) lack of ownership by the intended beneficiaries, (c) failure to reach resource-poor farmers (youth and women), (d) limitations in the quality of field and technical staff, and (e) high and unsustainable public costs. The farm family not only requires agricultural development

support but also the support for diversified livelihoods for that there is a need to restructure government extension machinery with a new set of operational procedure with more flexible approach to meet the emerging needs of farmers at local level.

According to Chah *et al.* (2013), the agricultural development programs approaches will be workable if agricultural information dissemination and management is premised on understanding of what farmers' information needs are.

Singh, *et al.* (2010), in his study found that lack of knowledge, scientific application of crop management, diversification practices, inappropriate system such as non availability of quality input material in time, inadequate irrigation facility, non-remunerative prices, and dominance of middlemen in agricultural marketing structure have driven farmers to the debt trap and have caused distress leading to suicide.

Babu *et al*. (2013) conducted case studies in Maharashtra along with other three states of India in which he revealed that innovations are needed in extension services for reaching the unreached and allowing new models that are context, commodity, agro-ecology, and market-specific to emerge based on the local needs that engage different groups of farmers, should be encouraged.

Menong *et al*. (2013) carried a study to examine extension needs of commercial farmers in the North West province. The result of his study showed that the significant determinants of commercial farmers information needs were attitude to public extension; marital status; educational level membership of farmers groups and extension contacts. The study also concluded that information sources used by farmers are e-mobile phones, computer, internet, personal email, newspapers and other farmers or farmer association. There is a high need of agricultural inputs, production and market and supply chain on diseases and management, seeds, fertilizers, pesticides, agriculturalequipment available markets and product's demand.

## Research Methodology

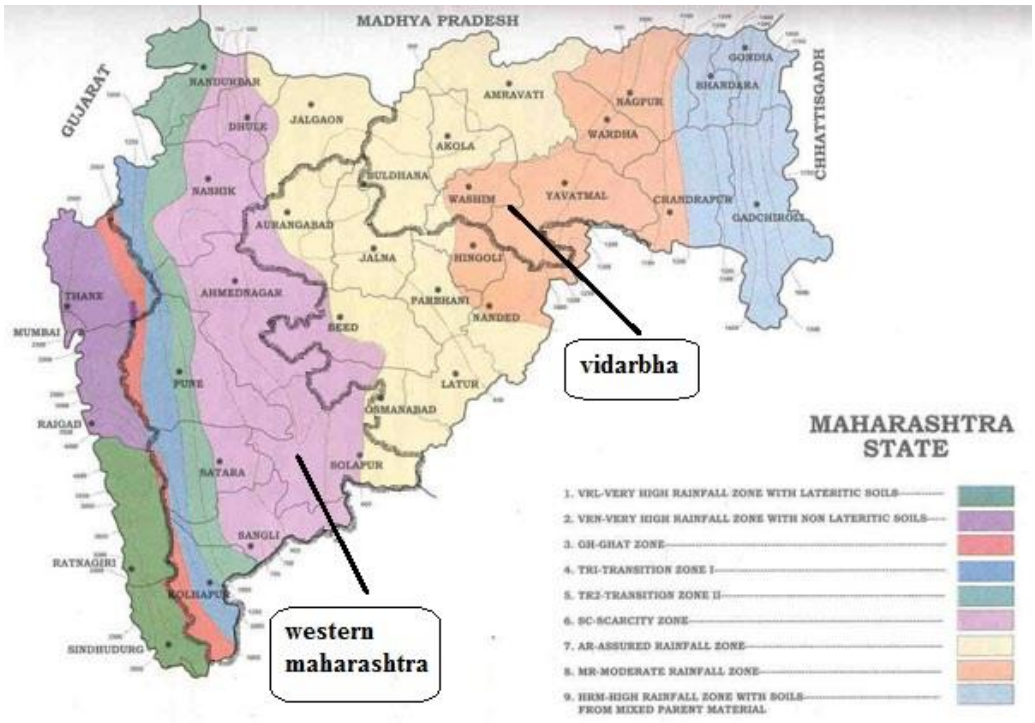
### Location of the study

The area of investigation of this study falls under the Western Maharashtra and Vidarbha regions of state of Maharashtra. The state has four regions namely Marathwada, Vidarbha, Western Maharashtra and Konkan. The State enjoys tropical monsoon climate.

The general profile of the state is as given below-

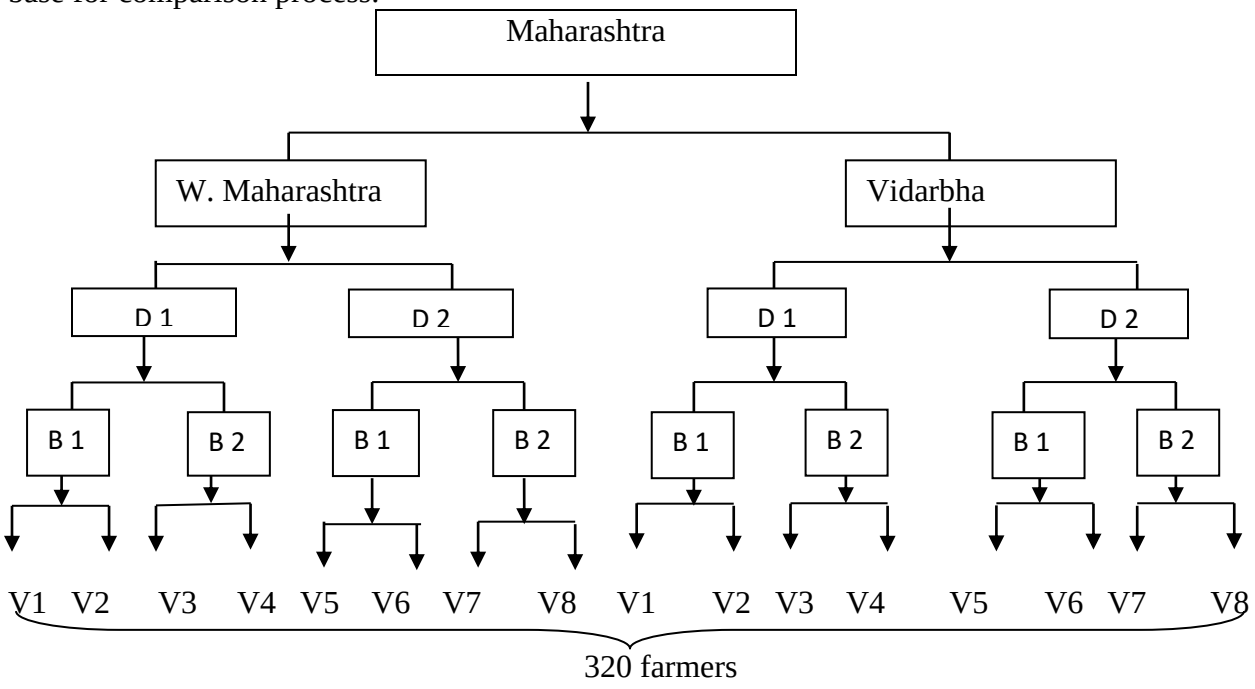
| | | | | | |
|---|---|---|---|---|---|
| 1. | Geographical Area- ('000 ha) | 30,771 | Sl. no. | Principal crops | Area ('000 ha) |
| 2. | Districts | 35 | 1. | Rice | 1,612 |
| 3. | Tahsils | 355 | 2. | Wheat | 1,097 |
| 4. | Gram panchayat | 27,873 | 3. | Jowar | 3,048 |
| 5. | Inhabited villages | 40,959 | 4. | Sugarcane | 1,099 |
| 6. | Un-inhabited villages | 2,706 | 5. | Cotton | 4,160 |
| 7. | Net area sown | 17,636 | 6. | All cereals | 7,702 |
| 8. | Total population ('000) | 1,12,374 | 7. | All pulses | 3,953 |
| 9. | Literacy rate (%) | 82.3 | 8. | All food grains | 11,655 |

Source- NIAM report (2013), Economic Survey of Maharashtra (2014-15).




**Sampling plan**

The two regions of Maharashtra will purposively select i.e. Western Maharashtra and Vidarbha as the major area of these regions which are under irrigation and rainfed condition, respectively. The selection of the district, block and villages will be based on multistage random sampling. And in case of selection of respondent's, 20 farmers representing different categories from each village covering to a total sample of 320 respondents will be taken up through simple random technique. The equality in the sample from both regions will made in order to create a suitable base for comparison process.



### 3.3 Variables and their Measurements

The variables were selected based on the objectives of proposed study. A brief detail of the variables considered in proposed study and their measurement is given below.

| Variables exploring profile of farmers | | Measurement |
|---|---|---|
| **Socio-personal** | | |
| 1 | Age ($X_1$) | On the basis of chronological age at the time of investigation |
| 2 | Gender($X_2$) | Structured schedule will be developed |
| 3 | Caste($X_3$) | Structured schedule will be developed |
| 4 | Education level ($X_4$) | Scale developed by Pareek and Trivedi(1964) |
| 5 | Family size ($X_5$) | Scale developed by Pareek and Trivedi (1964) |
| 6 | Marital status ($X_6$) | Structured schedule will be developed |
| 7 | Tenure status ($X_7$) | Structured schedule will be developed |
| 8 | Occupation ($X_8$) | Structured schedule will be developed |
| 9 | Years of farming experience ($X_9$) | Structured schedule will be developed |
| 10 | Social participation ($X_{10}$) | Structured schedule will be developed |
| **Socio-economic** | | |
| 11 | Size of holding ($X_{11}$) | Structured schedule will be developed |
| 12 | Annual yield ($X_{12}$) | Structured schedule will be developed |
| 13 | Cropping intensity ($X_{13}$) | Structured schedule will be developed |
| 14 | Farm resources available ($X_{14}$) | Structured schedule will be developed |
| 15 | Annual income, income from agriculture/ farming ($X_{15}$) | Structured schedule will be developed |
| 16 | Irrigation status ($X_{16}$) | Structured schedule will be developed |
| **Socio-psychological** | | |
| 17 | Attitude towards extension services ($X_{17}$) | Scale developed by Likert |
| **Communication** | | |
| 18 | Access to market, credit and insurance ($X_{18}$) | Structured schedule will be developed |
| 19 | Mass media exposure ($X_{19}$) | Scale developed by Singh (1972) |
| 20 | Contact with personal cosmopolite ($X_{20}$) | Scale developed by Singh (1972) |
| 21 | Contact with personal localites ($X_{21}$) | Scale developed by Singh (1972) |
| 22 | Training received ($X_{22}$) | Scale developed by De and Rao (2000) |

| Variables | | Measurement |
|---|---|---|
| 1 | Differential needs of farmers (Y1) | Structured schedule will be developed |
| 2 | Level of satisfaction (Y2) | Structured schedule will be developed |
| 3 | Gaps in Extension service needed and delivered(Y3) | Structured schedule will be developed |
| 4 | Constraints associated with receiving extension services | Structured schedule will be developed |

**Method of data collection**

In social science research, schedule plays a vital role. For the future investigation, interview schedule will prepared after completion of the review of literature and preliminary survey. The data will be collected from the 400 farmers representing both the regions with the help of interview schedule. The data collection will carry out after a pre-testing of interview schedule. The data compilation and tabulation will be done in the spread sheet by using MS Excel programme after completion of data collection.

**Analysis of data**

Data collected for the study will be arranged, coded and analyzed through the use of Statistical Package for the Social Sciences (SPSS) computer programme. Both descriptive and inferential statistical tools will be utilized to analyze the data.

Both descriptive and inferential statistical tools will utilize to analyze the data.

a. Descriptive statistical tools will be used are 1) frequency counts, 2) percentages 3) meanand 4) Standard Deviation.

b. Inferential statistical tools will be used are: 1) Spearman correlation, 2) Regression Analysis

c. tests of significance will be employed as per the objectives of the study

**Implication of the study**

-The study will provide a scope to look into the differential effectiveness, efficiency and functioning of various organizations in agricultural extension system.

- Reforms of agriculture extension programs and strategies

- Policy making for poor farmers**.**

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